

March 2021

IMPact@SUTD is a regular update featuring works by SUTD Faculty, Researchers, Students and Research Centres/Labs. We hope to create awareness of the Research by SUTD within the SUTD community and beyond. Share with us your SUTD works today so that we can include it in our next update.

## CONGRATULATIONS!



**Mohit Arora**  
(Alumnus, EPD)



Associate Professor  
**Arlindo Silva**  
(EPD)



Assistant Professor  
**Felix Raspall**  
(ASD)



Associate Professor  
**Lynette Cheah**  
(ESD)

For receiving the \*RCR 2020 Best Paper Award for their paper *Buildings and the circular economy: Estimating urban mining, recovery and reuse potential of building components.*

\* The Award is given annually to three papers published in RCR only, judged by an Award Committee consisting of Editorial Board members.



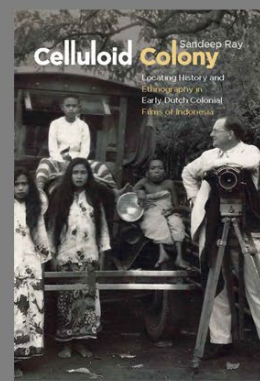
**Dr Sandeep Ray**  
Senior Lecturer  
Humanities, Arts  
and Social Sciences

## CONGRATULATIONS!

**Dr Sandeep Ray** For publishing the book '*Celluloid Colony: Locating History and Ethnography in Early Dutch Colonial Films of Indonesia*'.

*How should colonial film archives be read? How can historians and ethnographers use colonial film as a complement to conventional written sources?*

*Sandeep Ray uses the case of Dutch colonial film in Indonesia to show how a critically-, historically- and cinematically-informed reading of colonial film in the archive can be a powerful and unexpected source, and one more easily accessible today via digitisation.*



Scan for more information



**Multi-frequency single cell electrical impedance measurement for label-free cell viability analysis**  
*Analyst*

SUTD Author: Jianwei Zhong, Dahou Yang, Yinning Zhou, Minhui Liang and Ye Ai

"Cell viability analysis is currently performed through laborious and complicated cell staining procedure. In this work, we present a novel electrical impedance-based technique for high-throughput, label-free single cell level viability assessment, which provides a promising pathway for real-time in situ cell identification and integration with cell sorting/isolation platforms."

--- Ye Ai



**Machine Learning for Comparative Urban Planning: An Aviation Case Study**  
ACADIA 2020 –  
*Distributed Proximities*

SUTD Author: Ahmed Meeran and Sam Joyce

"Our study elucidates using Big Data, AI and Computer Vision to rethink what's possible for airports and Urban Planning in terms of whether it is sustainable or not for them to expand or contract based on specific typology analysis performed on computationally retrieved large scale aerial imagery using pixel-level parameters."

--- Ahmed Meeran

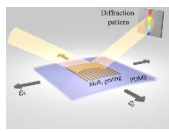


**Physics of electron emission and injection in two-dimensional materials: Theory and simulation**  
*Nature Energy*

SUTD Author: Yee Sin Ang, Liemao Cao, and Lay Kee Ang

"The physics of electrical contact and interfacial charge injection underlies the performance, energy-efficiency and the functionality of 2D-material-based nanodevices. In this article, we review the recent developments in the physics and computational simulations of electron emission, interfacial charge injection and electrical contacts in 2D material heterostructures and devices."

--- Yee Sin Ang



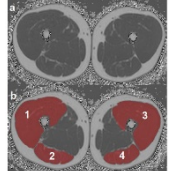
**A Biaxial Strain Sensor Using a Single MoS2 Grating**  
*Nanoscale Research Letters*

SUTD Author: Wenhui Wang



**Application of Machine Learning in 3D Bioprinting: Focus on Development of Big Data and Digital Twin**  
*International Journal of Bioprinting*

SUTD Author: Chua Chee Kai



**Association of Thigh Muscle Strength with Texture Features Based on Proton Density Fat Fraction Maps Derived from Chemical Shift Encoding-Based Water-Fat MRI**  
*Diagnostics*

SUTD Author: Karupppasamy Subburaj



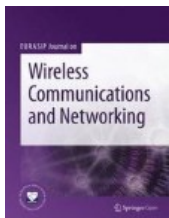
**Boron-nitrogen substituted planar cores: designing dopant-free hole-transporting materials for efficient perovskite solar cells**  
*Nanoscale*

SUTD Author: Weijie Chi



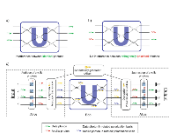
**Discriminative Dictionary Design for Action Classification in Still Images and Videos**  
*Cognitive Computation*

SUTD Author: Soujanya Poria



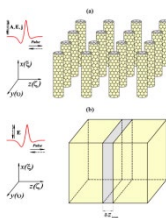
**Energy-efficient offloading and resource allocation for mobile edge computing enabled mission-critical internet-of-things systems**  
*Eurasip Journal on Wireless Communications and Networking*

SUTD Author: Peng Yang and Tony Q. S. Quek



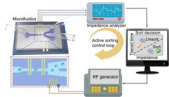
**Experimental quantum homomorphic encryption**  
*NPJ Quantum Information*

SUTD Author: Si-Hui Tan and Joseph F. Fitzsimons



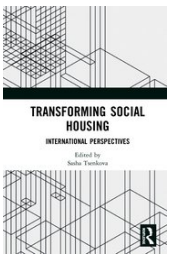
**External light control of three-dimensional ultrashort far-infrared pulses in an inhomogeneous array of carbon nanotubes**  
*Physical Review B*

SUTD Author: Alexander V. Zhukov



**Label-Free Multivariate Biophysical Phenotyping-Activated Acoustic Sorting at the Single-Cell Level**  
*Analytical Chemistry*

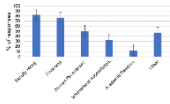
SUTD Author: Peixian Li and Ye Ai



## Moving towards age-inclusive public housing in Singapore

*Transforming Social Housing: International Perspectives*

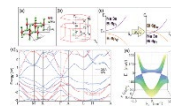
SUTD Author: Belinda Yuen



## Public policy schools in the global south: a mapping and analysis of the emerging landscape

*Policy Sciences*

SUTD Author: Sreeja Nair and Zeger Van der Wal



## Progress in Epitaxial Thin-Film Na<sub>3</sub>Bi as a Topological Electronic Material

*Advanced Materials*

SUTD Author: Weikang Wu and Shengyuan A. Yang,

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